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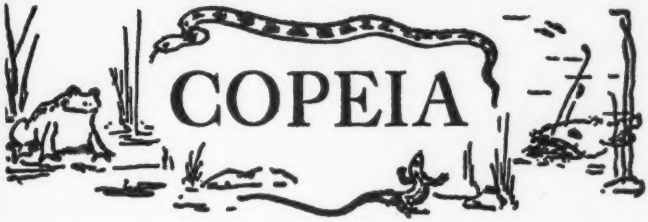

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MUTANDA ICHTHYOLOGICA II.
HERINGIA VS. *RHINOSARDINIA* (CLUPEIDAE), *MEDIPELLONA* VS. *CHIROCENTRODON* (CLUPEIDAE), AND *ENTONANTHIAS* VS. *MIROLABRICHTHYS* (ANTHIIDAE)

In 1912 Eigenmann (Mem. Carnegie Mus., 5, p. 445) described *Rhinosardinia serrata* from British Guiana. In 1917 Regan (Ann. Mag. Nat. Hist., (8), 19, p. 394) showed that *serrata* was a synonym of *Clupea amazonica* Steindachner 1880, and that *Heringia* Fowler (Proc. Acad. Nat. Sci. Philadelphia, 63, 0. 207) was prior to *Rhinosardinia*. It has not heretofore been noticed, however, that *Heringia* is preoccupied in Diptera, 1856; the two fishes concerned must, then, be known as *Rhinosardinia amazonica* (Stdr.) 1880, and *R. bahiensis* (Stdr.) 1880.

Jordan and Seale have recently described a new genus of Clupeidæ, *Medipellona* (Bull. Mus. Comp. Zool., 67, 1926, p. 417), based on *Pellona bleekeriana* Poey 1867 from Cuba. I cannot see that *Medipellona* differs greatly from *Chirocentrodon* Gunther 1868, as described by Norman (Ann. Mag. Nat. Hist., (9), 11, 1923, p. 21). *C. taeniatus* may be distinct from *C. bleekerianus* and *C. caribbaeus* but the genera seem the same.

In 1927 a remarkable genus of Anthiid fishes from the Western Pacific was described almost simultaneously by Herre and Montalban (Philippine Journ. Sci., 32, p. 413, pl. 1) and by Jordan and Tanaka (Ann. Carnegie Mus., 17, p. 385, pl. 34, fig. 2). The former description having appeared in March and the latter in June, *Mirolabrichthys* H. and M. must take precedence over *Entonanthias* J. and T.

Comparison of a paratype of *Entonanthias pascalus* with the description of Herre and Montalban seems

to show specific differences in the subequal dorsal spines, the shorter maxillary, and the lesser depth of the Japanese fish, so that the genus may stand with two species, *Mirolabrichthys pascalus* (J. and T. and *M. tuka* H. and M.

GEORGE S. MYERS

Stanford University,
California.

A NOTE ON THE FORMOSAN HOMALOPTERID FISH, *CROSSOSTOMA LACUSTRE* STEINDACHNER

In 1894 Boulenger described *Homaloptera formosanus* from Central Formosa (Ann. Mag. Nat. Hist., (6), 14, p. 463). In 1908 Steindachner (Sitzb. k. Akad. Wiss. Wien, 116, Nr. 7, p. 86) described a *Homaloptera formosanum* from Lake Candidius. It was not the same form that Boulenger had, however, and shortly thereafter (Ibid, 116, Nr. 8, 1908, p. 110) Steindachner proposed the substitute name *Crossostoma lacustre* for his fish, thus recognizing its relationship to *Crossostoma davidi* Sauvage.

In 1919 Oshima (Ann. Carnegie Mus., 12, p. 194) described *Formosania gilberti*, a new genus and species of Homalopteridæ from the Tamusui River. It appears to be the same as *Crossostoma lacustre*, Oshima having overlooked both of Steindachner's notes. Recently Nichols (Amer. Mus. Novitates, No. 224, 1926, pp. 3-4) has reduced *Formosania* to a subgenus under *Crossostoma*, placing his two new Fukien species in this subgenus with the Formosan fish, which must be known as *Crossostoma lacustre* Steindachner rather than *C. gilberti* (Oshima).*

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California

*There are specimens of this species in an unidentified collection in the Stanford University Museum, obtained by V. Kuhne in 1909, but there is no more definite locality given than "Formosa."

*A CORRECTION

On page 117 of Volume XLIII, part II, 1927 (1928) Bulletin of the U. S. Bureau of Fisheries, Washington, in a paper entitled "Annotated list of fishes collected in the vicinity of Greenwood, Miss., with descriptions of three new species" by Samuel F. Hildebrand and Irving L. Towers, a small, immature specimen of "shiner" was referred to *Notropis atherinoides* Rafinesque "with much doubt." Recently Isaac Ginsburg, of the Bureau of Fisheries, has had an opportunity to examine this specimen in connection with other Cyprinoids and he has identified it as *Opsopoeodus emiliae* Hay. Mr. Ginsburg kindly has called my attention to this determination for which he has produced ample proof and it is with pleasure that I make the correction.

SAMUEL F. HILDEBRAND

NOTE ON *FODIATOR* JORDAN AND MEEK

In Copeia (No. 167, June 28, 1928, pp. 37-38), I made the statement that *Hemiexocoetus* and *Evolantia* were synonymous. This is not true, as *Hemiexocoetus* is surely the young of *Fodiator*, as contended by Nichols and Breeder (Zoological Sci. Contrib. N. Y. Zool. Soc., Vol. 3, No. 7, June 11, 1928, p. 426). In the very young of *Evolantia* the ventrals are much shorter than in *Fodiator*, likewise the pectorals. *Hemiexocoetus* Fowler will therefore rest as a synonym of *Fodiator* Jordan and Meek.

HENRY W. FOWLER

Academy of Natural Sciences,
Philadelphia, Pa.

*Published by permission of the Commissioner of Fisheries.

THE HERPETOLOGY OF WAUKESHA COUNTY, WISCONSIN*

The recent publication by the Milwaukee Museum of their bulletin by Pope and Dickinson on the Amphibians and Reptiles of Wisconsin, caught the writer with a rather bulky manuscript dealing with the amphibians and reptiles of southeastern Wisconsin nearly completed. As the value of an extended paper of this type is, at the present moment, minimized, the data therein contained have been boiled down, and a brief note concerning the species found in the region is offered herewith. The museum bulletin contains relatively little data for the region in which the writer has worked for something over seventeen summers, hence the publication of the present paper seems warranted. Pope and Dickinson list fifteen reptiles and six amphibians from Waukesha county; the present paper records twenty-five reptiles and nineteen amphibians.

AMPHIBIA

Caudata

1. *Necturus maculosus* (Raf.)

Abundant in practically all the lakes of the region, and far less common in the rivers and streams. It is of historical interest, at least, to note that it is Oconomowoc lake that yielded the material used by Dr. Eycleshimer in his monumental study of the embryology of the species.

2. *Triturus viridescens viridescens* (Raf.)

Two specimens of the adult, collected under a log in a tamarack swamp near Golden lake are the only specimens seen.

3. *Ambystoma maculatum* (Shaw)

Not uncommon locally, though relatively seldom seen. Sixteen specimens collected, most of them near Oconomowoc lake.

*Contribution from the Zoological Laboratory of the University of Illinois.

4. *Ambystoma opacum* (Gravenhorst)

Rare. Two specimens, both from under rotten logs, are all I have seen: one from near Oconomowoc lake, the other near Dutchman's lake.

5. *Ambystoma tigrinum* (Green)

The most abundant species of the genus. County-wide in distribution.

6. *Ambystoma jeffersonianum* (Green)

Nine specimens, seven from near the Skidmore ponds, and two from the Pine lake region, relatively uncommon.

7. *Hemidactylium scutatum* (Schlegel)

A single specimen, collected in 1913, is the only record at hand.

8. *Plethodon cinereus* (Green)

Three specimens all from near Oconomowoc lake are the only records. Rare.

9. *Plethodon glutinosus* (Green)

Five specimens taken under moist logs in swamps. Rare.

Salientia

10. *Bufo americanus* Holbrook

The only species of the genus found within the county. Formerly toads were very abundant, but there seems to have been a great decrease in their numbers during recent years.

11. *Acris gryllus* (LeConte)

The most abundant of the small frogs of the region. County-wide in distribution, but most frequently found in swamps or along small streams.

12. *Pseudacris triseriata* (Wied)

A common inhabitant of wet swamps and small, weedy stream courses. County-wide in distribution.

13. *Hyla crucifer* Wied

The second most abundant of the small frogs. Common along weedy ponds and streams.

14. *Hyla versicolor versicolor* (LeConte)

Common throughout the region, but not often seen unless hunted for.

15. *Rana cantabrigensis* Baird.

The least common of the genus in the area under discussion.

16. *Rana clamitans* Latreille

Very abundant along the lake shores and along the margins of the smaller streams.

17. *Rana pipiens* Schreber

The most abundant amphibian of the region.

18. *Rana palustris* LeConte

Out of 465 specimens of the larger frogs collected during 1926 and 1927, thirty-one belonged to this species.

19. *Rana catesbeiana* Shaw

Still present, but steadily decreasing in numbers. Formerly very abundant; now seldom seen, but sometimes heard.

Reptilia

Sauria

1. *Eumeces fasciatus* (Linn.)

Very rare. One young male, and two adult females, collected near Golden lake in 1913 and 1915 respectively, are the writer's only records.

2. *Diadophis punctatus edwardsii* (Merrem)

Rare. Only two specimens seen in the region discussed.

3. *Heterodon contortrix* (Linn.)

Very rare. One specimen taken in 1921.

4. *Liopeltis vernalis* (Harlan)

Not common. Usually one or two specimens turn up each summer.

5. *Coluber constrictor flaviventris* (Say)

Rare. Three specimens have been brought to the writer since 1920.

6. *Elaphe vulpina* (Baird and Girard)
Several large specimens have been brought to the writer during the last five years.

7. *Pituophis sayi* (Schlegel)
Formerly common; now very rare indeed.

8. *Lampropeltis triangulum triangulum* (Lacepede)
Formerly far more common than at present, though still not rare.

9. *Natrix kirtlandii* (Kennicott)
Very rare. One specimen, Oconomowoc river, 1926.

10. *Natrix septemvittata* (Say)
Very rare. Two specimens were brought to the writer for identification in 1927.

11. *Natrix sipedon sipedon* (Linn.)
The abundant water snake of the region. Found throughout the region.

12. *Storeria dekayi* (Holbrook)
The common "worm snake" of the region.

13. *Storeria occipitomaculata* (Storer)
Not uncommon, but less so than the preceding species.

14. *Thamnophis proximus* (Say)
One of the less common members of the genus; fourteen records.

15. *Thamnophis radix* (Baird and Girard)
Next to *T. sirtalis* the most common of the garter snakes.

16. *Thamnophis butleri* (Cope)
Accredited to the county by Pope and Dickinson, but not taken by the writer.

17. *Thamnophis sirtalis sirtalis* (Linn.)
Abundant throughout the region; the common garter snake.

Testudinata

18. *Sternotherus odoratus* (Latreille)
An abundant species which, because of its extremely

aquatic habits, is not often met with outside of the breeding season.

19. *Chelydra serpentina* (Linn.)

Abundant throughout the county.

20. *Clemmys guttata* (Schneider)

Rare. One specimen from the state fish hatchery ponds at Delafield; a second from the Skidmore ponds.

21. *Emys blandingii* (Holbrook)

Rare. But four specimens have come to hand since 1922.

22. *Terrapene carolina carolina* (Linn.)

Very rare. A specimen caught on the south shore of Oconomowoc lake in July, 1928, was brought to the writer for identification.

23. *Chrysemys marginata marginata* (Agassiz)

The abundant painted turtle of the region; found everywhere.

24. *Chrysemys marginata bellii* (Gray)

County-wide in distribution, but much less common than the preceding species.

25. *Amyda spinifera* (LeSueur)

Very rare. The writer has seen but one specimen, this taken in a sein used to catch carp in Lac La Belle.

ALVIN R. CAHN

REPTILES AND AMPHIBIANS FROM SOUTHEASTERN OKLAHOMA AND SOUTHWESTERN ARKANSAS*

The University of Oklahoma Museum of Zoology sent its third expedition into the field during the summer of 1927. The party consisted of seven students under my direction. The territory chosen was eastern Oklahoma and adjacent portions of Arkansas, primarily because of certain ichthyological problems to be studied there. Nevertheless, some interesting

*Contribution from the Zoological Laboratory of the University of Oklahoma, Second Series, No. 89.

additions were made to the known herpetological fauna of Oklahoma, such as *Bufo americanus*, *Bufo fowleri*, *Eurycea melanopleura*, and *Amyda ferox*.

Small collections of reptiles and amphibians were made in southeastern Oklahoma in Latimer, Haskell, Hughes, and Pittsburg counties but more of the work was done in Le Flore County, along the Kiamichi River near a point about 8 miles west of the Arkansas-Oklahoma line and south of Heavener about 18 miles in a straight line or 27 miles by the road over Spring Mountain. Specimens were secured in southwestern Arkansas from Polk, Howard, Sevier, Pike, Montgomery, and Scott counties.

1. *Plethodon glutinosus* (Green)
   Polk County, Arkansas, 4 miles east of Oklahoma-Arkansas line.
2. *Eurycea melanopleura* (Cope)
   Le Flore County.
3. *Desmognathus fuscus brimleyorum* (Stejneger)
   Le Flore County.
4. *Bufo americanus* Holbrook
   Latimer County, 3 miles north of Red Oak; Le Flore County; Polk County, Arkansas, 8 miles east of Oklahoma-Arkansas line, 1 mile west of Wickes, 4 miles west of Board Camp; Scott County, Arkansas, 9 miles south of Waldron.
5. *Bufo fowleri* Garman
   Montgomery County, Arkansas, 7 mile west of Norman; Sevier County, Arkansas, 20 miles east of De Queen.
6. *Acris gryllus* (Le Conte)
   Le Flore County; Polk County, Arkansas, 8 miles east of Oklahoma-Arkansas line; Sevier County, Arkansas, 20 miles east of De Queen.
7. *Pseudacris occidentalis* (Baird and Girard)
   Hughes County, 6 miles south of Weleetka.

8. *Hyla versicolor versicolor* (Le Conte)
Polk County, Arkansas, 1 miles west of Wickes.

9. *Rana catesbeiana* Shaw
Le Flore County.

10. *Rana clamitans* Latreille
Le Flore County; Scott County, Arkansas, 1 mile north of Waldron.

11. *Rana sphenocephala* (Cope)
Hughes County, 6 miles south of Weleetka; Le Flore County.

12. *Gastrophryne carolinensis* (Holbrook)
Howard County, Arkansas, 20½ mile east of De Queen.

13. *Crotaphytus collaris collaris* (Say)
Latimer County, 3 miles north of Red Oak; Le Flore County.

14. *Sceloporus undulatus undulatus* (Latreille)
Latimer County, 3 miles north of Red Oak; Le Flore County; Montgomery County, Arkansas, 7 miles west of Norman; Pike County, Arkansas, 3 miles east of Newhope; Polk County, Arkansas, 4 miles east of Oklahoma-Arkansas line, 8 miles east of Oklahoma-Arkansas line, 3 miles south of Mena, 1 mile northeast of Mena; Scott County, Arkansas, 8 miles north of Waldron.

15. *Cnemidophorus sexlineatus* (Linnaeus)
Le Flore County; Pike County, Arkansas, 3 miles east of Newhope; Polk County, Arkansas, 4 miles east of Okalhoma-Arkansas line, 8 miles east of Oklahoma-Arkansas line, 3 miles south of Mena, 4 miles west of Board Camp.

16. *Leiolopisma laterale* (Say)
Latimer County, 3 miles north of Red Oak; Le Flore County; Pike County, Arkansas, 3 miles east of Newhope; Polk County, Arkansas, 1 mile west of Wickes.

17. *Eumeces fasciatus* (Linnaeus)
Hughes County, 6 miles south of Weleetka; Latimer County, 3 miles north of Red Oak; Le Flore County; Pike County, Arkansas, 2 miles east of Dierks.

18. *Carphophis amoena vermis* (Kennicott)
Le Flore County.

19. *Heterodon contortrix* (Linnaeus)
Le Flore County.

20. *Opheodrys aestivus* (Linnaeus)
Le Flore County; Pittsburg County, 5 miles east of Stuart.

21. *Masticophis flagellum flagellum* (Shaw)
Haskell County, 5 miles west of Stigler; Le Flore County; Scott County, Arkansas, 11 miles south of Waldron.

22. *Coluber constrictor flaviventris* (Say)
Le Flore County.

23. *Elaphe obsoleta confinis* (Baird and Girard)
Le Flore County.

24. *Lampropeltis calligaster* (Harlan)
Le Flore County.

25. *Lampropeltis getulus holbrooki* (Stejneger)
Latimer County, 3 miles north of Red Oak; Le Flore County; Montgomery County, Arkansas, 7 miles west of Norman; Polk County, Arkansas, 1 mile west of Board Camp.

26. *Natrix sipedon sipedon* (Linnaeus)
Le Flore County; Polk County, Arkansas, 4 miles east of Oklahoma-Arkansas line, 3 miles south of Potter; Sevier County, Arkansas, 20 miles east of De Queen.

27. *Thamnophis sirtalis sirtalis* (Linnaeus)
Le Flore County.

28. *Agkistrodon piscivorus* (Lacépède)
Le Flore County.

29. *Crotalus atrox atrox* (Baird and Girard)
Le Flore County.

30. *Crotalus horridus* Linnaeus
Haskell County, 3.5 miles north of Quinton.

31. *Terrapene carolina triunguis* (Agassiz)
Le Flore County; Pike County, Arkansas, 4 miles north of Kirby; Pittsburg County, 5 miles east of Stuart.

32. *Amyda ferox* (Schneider)
Le Flore County.

A. I. Ortenburger

Museum of Zoology,
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ON SOME AUSTRALIAN TOADS OF THE GENUS *PSEUDOPHRYNE*

Among a collection of reptiles and amphibians brought back from Western Australia by Mr. W. S. Brooks, were some *Pseudophryne* about which he has supplied some interesting field notes. We are indebted to Mr. H. W. Parker for comparing examples from our series with material in the British Museum and for making the determinations.

Pseudophryne bibronii Steindachner.

This determination is made by Mr. Parker with reservations as the specimens submitted differ from those in the British Museum in the absence of a light spot on the upper arm and the presence of two yellow spots on the breast, in their less conspicuous metatarsal tubercles and darker ventral surface. In our series of 47 (M.C.Z. No. 13019-13027), from Augusta, Western Australia there is, however, considerable variation in the amount of marbling on the lower surface which appears to be an age character.

Thus 10 of the series (13-15 mm. in length from

snout to vent) lack the yellow spots on the breast, being entirely black on throat, breast and belly.

Twenty-three others (13-18 mm. mostly 15-16) have the yellow spots on the breast, but are otherwise entirely black on throat, breast and belly.

Seven more (19-22 mm.) besides having the yellow spots, very faint in the two largest, have the lower surface faintly marbled.

The largest seven (two are 21 mm., five are 22 mm.), possibly all are females (?), are handsomely marbled in yellow and black over the entire lower surface.

At Manjimup, where Mr. Brooks found them in association with *P. guentheri* Boulenger, the series differs (in alcohol) from those taken at Augusta in that all (the smallest being 14 mm.) show the yellow spots on the breast and some degree of marbling, though here again it is more distinct on fully grown specimens than on the smaller ones.

The ten *P. guentheri* from Manjimup, February 7, 1927, some of which have been examined by Mr. Parker who finds that they agree with the type, are (in alcohol) pure white below, vermiculated with black.

Mr. Brooks has kindly furnished us with the following extracts from his diary:

"My first observance of this frog was on January 24, at Denmark, forty miles west of Albany, on the southwest coast. At the time I was exploring the bed of a small and nearly dried-up tributary of the Albany River flowing through a flat, rather moist area of 'paper-bark trees'.

Under the stones, the mud harbored various frogs, and crayfish. The former were extremely active with the exception of this *Pseudophryne* that appeared unable to hop, and merely crawled with alternating use of the legs.

Having seen but this single specimen up to that time, I assumed that it might be rare, and noted with

some interest the beautiful dark blue of the dorsal surface, and the vivid orange spots of the under side and hind legs. Later I found great variation in the distribution of the spots, and a color ranging to yellow. Also, upon rare occasions, the ground color was brown.

My next experience with this species was on Feb. 7 while collecting at Manjimup about two hundred miles south of Fremantle. Here the elevation is some nine hundred feet, the terrain varied and hilly, with a growth of gigantic Karri trees, as well as Jarrah, and Red Gum.

Here under one log, a very large one, I found several dozens of these little frogs associated with the fearful 'bull' or 'sergeant' ants, the most vicious, poisonous and thoroughly terrifying insects that I have had the misfortune to meet. Apparently the best of relations were established between the ants and the frogs, as the latter were in and about the galleries, and it was with considerable fear and agilit ' that I obtained my series with long steel forceps.

Again, at Augusta, on the extreme southwest tip of Australia, I found on March 6, a colony of fifty-two associated with 'bull' ants, and using their galleries, or, at least, the entrances thereof. This colony was on a hill by the tidal, lower reach of the Blackwood River, and the whole region, like most of Australia had been burned over many times.

My next collecting station was at Pemberton, twenty miles east of Manjimup. This region supports a tremendous virgin growth of the giant Karri tree, and it is now being lumbered by the government when Australian labor is in a working mood.

On March 17, on a hill rising abruptly from the Warren River, a small but rapid stream, I found under a small log, some three hundred yards from the stream, two of these frogs, and a pile of twenty-five or thirty eggs about 3-16 inches in diameter. They contained

active embryos with the eyes plainly showing. The situation was dry, and it appeared that the eggs had been rolled in dust to retard evaporation, giving them the appearance of pills covered with powered cinnamon.

Taking two small, wide-mouthed bottles, I placed some of the earth from beneath the log in each, and a few of the eggs. One bottle I kept moderately moist; the other I kept dry. If the weather became stormy with a drop in temperature I carried these bottles in my inside coat pocket. For six weeks the embryos continued active, yet without any development that I was able to note, until on May 1, when the vessel was at Port Said, they died, and immediately became covered with mold."

T. Barbour
A. Loveridge

RANGE EXTENSIONS IN CALIFORNIA

I have lately noted specimens of certain amphibians and reptiles from localities which sufficiently extend the previously known range limits of the species to be worthy of record.

Bufo cognatus californicus Camp

I have records of this species in San Diego County from Pine Valley, Clover Flat, Cottonwood Creek (three miles south of Buckman Spring) and San Diego. At Pine Valley adults were found active at night, both in sandy washes and amongst leaves and grass under the oaks.

Rana boylii muscosa Camp

The previously recorded southern limit of this species has been Keen Camp in the San Jacinto Mountains, Riverside County, California. Recently it has been found to be plentiful in Pauma Creek, where it flows through Upper Doane Valley, Palomar Mountain, San Diego County, at elevation 5100 feet.

The first specimens at this location were taken by Dr. E. H. Taylor of the University of Kansas during a collecting trip in which the writer participated.

Dipsosaurus dorsalis dorsalis (Baird and Girard)

Through the courtesy of U. S. Royar of Los Angeles, I have seen a specimen of this lizard from a ranch three miles north of Calabasas, Los Angeles County. This is at the west end of San Fernando Valley in the southwest section of the county and carries the species well to the westward of its previously reported range and out of the desert areas which constitute its usual habitat. Evidently this lizard ranged through the San Fernando Valley prior to the present extensive agricultural development, although it does not occur there now, according to W. A. Rowe of San Fernando, who is thoroughly conversant with the herpetology of the region.

Uta microscutata Van Denburgh

Said Dr. Leonhard Stejneger in 1894, in describing *Uta mearnsi*, "The accidental nature of reptile collecting is well illustrated by the discovery of this very conspicuous and distinct species in a region which has been visited before by some of our best collectors."*

On the rocky hill east of Jacumba, which is quite probably the type locality of *Uta mearnsi* (for this is apparently Mearns' Station No. 86), I found over thirty years later another lizard, which while not undescribed, nor as conspicuous and plentiful as *Uta mearnsi*, is at least present in some numbers and is new to the fauna of the United States. This is *Uta microscutata* Van Denburgh, previously known from the peninsula of Lower California and several of the Gulf islands, ranging from the San Pedro Martir Mountains in the north, to Isla San Francisco in the south. The Jacumba locality extends the range 100 miles to the northwest.

*Proc. U. S. N. M., XVII, p. 589.

I find *Uta microscutata* moderately common in the vicinty of Jacumba, having collected fourteen specimens within a three and a half mile radius of the town. I have also one specimen from Cottonwood (now Barrett P. O.), thirty miles to the westward, on the Pacific side of the mountains.

Uta microscutata at Jacumba is found primarily in association with *Uta mearnsi*, *Uta stansburiana hesperis* and *Sceloporus orcutti*, although other lizards, such as *Coleonyx variegatus*, *Callisaurus ventralis gabbii*, *Sceloporus occidentalis biseriatus*, *Phrynosoma blainvillii blainvillii*, *Anniella pulchra*, *Xantusia henshawi*, *Xantusia vigilis* and *Cnemidophorus tessellatus stejnegeri*, occur at Jacumba.

But the first named group are essentially rock lizards and are more often seen together. Even with these, some differences of habit may be noted. *Uta mearnsi* prefers the softer disintegrating granite boulders, where in the early morning it may be seen, alternating between its rather clumsy waddling gait when undisturbed, and the most astonishing acrobatic feats when alarmed. So far as I have observed, it is the only lizard in this region which has the power to run swiftly while clinging body downward to the under surface of a boulder. *Sceloporus orcutti* is extremely wary and is not given to those pauses of curiosity which are the undoing of so many lizards. It runs over the boulder surfaces with great swiftness and takes refuge in crevices. *Uta stansburiana hesperis* perches on rock tops for observation and when further disturbed, generally takes refuge in ground holes, particularly under boulders.

Uta microscutata is found on the smaller, darker boulders. It is more wary than *U. s. hesperis* and when approached it takes refuge in rock crevices rather than ground holes. It does not seem to be present on the large boulders preferred by *Uta mearnsi*.

Uta microscutata can usually be distinguished from *U. s. hesperis* prior to collection, if a good view can be had of it. It averages smaller in size and is proportionately more slender. The body is darker than in *U. s. hesperis* and the tail is quite black. In *U. s. hesperis* some striping, either of head or body is nearly always in evidence if a side view can be obtained. Nevertheless, I have been frequently disappointed in picking up shot specimens to find that what was expected to be *U. miscroscutata* proved to be the more common species.

In the California specimens of *U. microscutata* I do not find the throat color to be blue in the males, as stated by Van Denburgh. Eleven specimens of both sexes collected this year and noted while fresh have all had yellow throat patches, sometimes edged with orange. Even a juvenile specimen, although lacking the blue patches on the breast, had the yellow throat. The yellow changes in alcohol to dull green within a short time.

Four specimens were checked against Ridgway's Color Standards within a few moments after collection, with the following results:

A female: Throat pale lemon yellow; belly cendre blue, fading to venice Green, posteriorly.

A male: Throat light greenish yellow edged with orange; belly cendre blue.

Another male: Throat bright chalcedony yellow; belly bremen blue to beryl green.

A young male: Throat strontian yellow; belly bremen blue.

Through the courtesy of Mr. J. R. Slevin of the California Academy of Sciences I have had access to Lower California specimens of *Uta microscutata*. Some color differences are at once evident, yet the importance of these cannot be ascertained, as the colors change in preservation, and it is perhaps significant that my oldest specimens, collected in 1926, more nearly

approach the Lower California material, taken in 1923. In general, it can be said that the Lower California specimens are blue on the ventral surface, from nose to tail, in a practically unbroken patch. The Jacumba specimens have a yellow throat patch, the blue beginning at the breast. Likewise, the blue patch is indented by a "V" anteriorly. A comparison of live specimens from both areas would therefore be interesting.

Uta microscutata has an exceedingly delicate tail, only one of my fifteen specimens being original and complete.

Charina bottae (Blainville)

Van Denburgh gives northern Tulare County as the southerly limit of this species. Through the courtesy of Mr. Chas. Bogert of Los Angeles, I have lately seen a specimen of this snake from Switzer Canyon near Lake Arrowhead, San Bernardino County. Several other specimens were taken in the same locality. This locality extends the range approximately 170 miles to the south. It is also of interest in demonstrating an overlap in the ranges of the two California boas (*C. bottae* and *Lichanura roseofusca*), both being found in the San Bernardino Mountains.

Thamnophis ordinoides elegans (Baird and Girard)

Of interest was the discovery in 1927 of a colony of the Mountain Garter Snake on Laguna Mountain, San Diego County. The previous southern limit to the known range had been the San Bernardino Mountains along the southern border of San Bernardino County. Thus, the range is extended about ninety miles southward.

It is extremely doubtful that the range is continuous through the intervening territory, as there are extensive gaps of Lower Sonoran character between the mountain or Transition areas.

Three specimens of *Thamnophis ordinoides elegans* from Laguna are available. The differences from *T. o. hammondii*, the common garter snake of this district, are definite, particularly the complete dorsal stripe in *T. o. elegans*. I have examined over five hundred specimens of *T. o. hammondii* from this county and have not seen a specimen containing any indication of a dorsal stripe, beyond an occasional short spot on the neck. On the other hand, these three specimens of *T. o. elegans* have perfect stripes from head to tail. *T. o. hammondii* is found on Laguna Mountain where the three specimens of *T. o. elegans* were collected, but no evidences of intergradation have thus far been discovered. Van Denburgh has noted that *T. o. elegans* does not seem to intergrade with *T. o. hammondii* in the southerly part of their ranges.

Mountain colonies such as this of *T. o. elegans* seem characteristic of the higher areas in San Diego County, *Ensatina croceater*, *Sceloporus graciosus vandenburgianus* and *Lampropeltis multicincta* being other examples amongst the herpetological fauna.

Thamnophis sirtalis infernalis (Blainville)

The southerly limits of the range of the Pacific Garter Snake have heretofore been given as Bixby, Los Angeles County, and Riverside, Riverside County, California. March 27, 1927, I found a specimen crushed on the highway at Bonsall, San Diego County. Later in the year the species was recorded from two other localities on the San Luis Rey River, four miles east of Bonsall, and San Luis Rey Mission; and likewise from San Pasqual on the San Dieguito River. Altogether, two live and five crushed specimens were recorded. It is interesting to speculate whether the unusually wet winter characterized by high water in the rivers was instrumental in bringing these snakes to light. None had been recorded during the previous four years which involved as thorough an investigation of the same territory.

Trimorphodon vandenburghi Klauber

Since the publication of notes on this snake,* I have through the kindness of Mr. Chas. Bogert of Los Angeles, received a specimen taken in Red Rock Canyon, northeast Kern County, California. This locality is about ninety miles north of the previously known range. The specimen is particularly interesting in that it is decidedly more like *T. lyrophanes* in coloration than any other of the thirteen California specimens I have seen. The body spots number 34 and the anal plate is undivided. Since the appearance of the above mentioned notes I have had specimens from Mountain Springs Grade, Imperial County and Cottonwood, San Diego County. They have the usual dark brown coloration of the Southern California specimens. The body spots are 39 and 34 respectively. The anal plates are indeterminate on account of the condition of the specimens, both of which had been run over by autos.

Crotalus atrox atrox (Baird and Girard)

This snake has heretofore been reported in California only from the Imperial and Coachella Valleys, these being sections of the Colorado Desert. From the Mohave Desert, which is separated from the Colorado Desert by the San Bernardino and Chocolate ranges, it has been thought absent, which supposition was lately utilized as the key to the plot of an ingenious detective story appearing in the Saturday Evening Post. I am now able to report three typical specimens from Ripley, eastern Riverside County on the northeast or Mohave side of the Chocolate Mountains.

Crotalus exsul Garman

In May, 1928, I found a specimen of this snake dead by the roadside at Whittier, Los Angeles County, California. This is, so far as I am aware, the first specimen reported from Los Angeles County, or from

*Trans. San Diego Soc. Nat. Hist., Vol. V, No. 11, pp. 183-194.

the Los Angeles–Santa Ana coastal plain. This extends the range some thirty-five miles to the north and west.

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NOTE ON *PARALEPIS BARRACUDINA* FOWLER AND PHILLIPS

Mr. Vilh Ege of the Carlsberg Laboratorium, Copenhagen, Denmark, has informed me he thinks *P. barracudina* Fowler and Phillips 1910 represents the original *P. borealis* Reinhardt 1832. This last is apparently a composite species according to Lutken 1892, who divides it into two forms, reserving as *P. borealis* Reinhardt the example similar to *P. barracudina* and for the other proposing *P. broyeri*. This action is invalid as Gill had long before (1864) proposed *Arctozenus* with the genotype *P. borealis* Reinhardt, so that Lutken's *P. broyeri* becomes a synonym of the same. Lutken's *P. borealis* then falls with *P. barracudina*, which latter is therefore still available. I am indebted to Mr. Ege for directing my attention to this problem while pursuing his work with paralepids obtained by the "Dana."

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NOTES ON THE NAMES OF THE SPRING PEEPER, THE CARPENTER FROG, AND *ANEIDES AENEUS*

If common practice in regard to the gender of classical specific names be consistently followed (as in *Phrynosoma solaris* versus *P. solare*) it would seem that the name of the Spring Peeper must be *Hyla*

crucifera rather than *H. crucifer*. I have already indicated this (Proc. Indiana Acad. Sci., (1926) 1927, 36, p. 338) and it is the form adopted by Dr. Jordan in his forthcoming new addition of the "Manual of Vertebrates."

In attempting to give a common name to *Rana virgatipes* most writers have used Sphagnum Frog, but I doubt if it is known by this name anywhere in its range. In Southern New Jersey it is known by the highly characteristic and easily remembered name Carpenter Frog, and knowing this name, one could never mistake its presence in the marshes and lakes where it is calling. It seems to me that a true indigenous name, especially such a good one, should take precedence over a manufactured one.

It may be well to call attention to a current error in citations of the type locality of *Rana virgatipes*. Cope's locality was Mare Run, N. J., and Miss Dickerson's erroneous statement of it as Atlantic City was corrected as long ago as 1907 by Fowler (Ann. Rept. N. J. State Mus., (1906) 1907, p. 126).

If my interpretation of the original designation of *Plethodon aeneus* (Amer. Nat., Nov. 1881, p. 878) and of Article 21 of the International Rules is correct, *Aneides aeneus* should be credited to Cope alone rather than to Cope and Packard.

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THE FOOD OF THE HELLBENDER *CRYPTOBRANCHUS ALLEGANIENSIS* (DAUDIN)

On May 21, 1927 I took three adult Hellbenders in Wolf Creek near Slippery Rock, Butler County, Pa. These were found near large rocks in water from two

to four feet deep. One specimen was shot three times with a .32 cal. revolver, and only temporarily stunned for it was quite active until it was killed twenty-four hours later. The specimens were brought to the laboratory in a sack and regurgitated the following food while in transit; 2 Stone Rollers (*Campostoma anomalum*) 135 mm. and 70 mm. in length, 6 crayfish (*Cambarus sp*?), and portions of 3 other crayfish.

An examination of the stomach contents of the specimens yielded the following: C. M. 4138 a, ♀, 3 crayfish, portions of 3 crayfish, 1 piece of leaf, and 2 pebbles (24 x 20 x 19 mm. and 23 x 17 x 16 mm.); C. M. 4138b, ♂, 2 crayfish and portions of 8 crayfish; C. M. 4138c, ♂, 8 crayfish, portions of 8 crayfish, and broken bits of plant stems.

Omitting the extraneous matter, pebbles and plant material, which was probably swallowed incidentally with food we reach a total of 41 crayfish and 2 fishes as the stomach contents of the three specimens. The crayfish in the anterior portion of the stomachs were normal in coloring, but those in the posterior portion, which were partially digested, were red, the action of the digestive juices having produced the same color change as boiling.

M. Graham Netting

Carnegie Museum

A NOTE ON THE EGG-LAYING OF *PSEUDEMYS FLORIDANA* (LE CONTE)

On January 11, 1927, I received three specimens of *Pseudemys floridana* (Le Conte), C. M. 4749-4751, which had been collected January 4, 1927 at Lutz, Hillsboro County, Florida by George Krautwurm, a collector of the Carnegie Museum. The turtles were shipped from Florida on January 6, in a crate without any material to protect them from the cold, and as

the intervening days were quite wintry they were stiff and motionless when received. After several hours in the laboratory they became quite active, however. During the night the largest specimen laid five eggs. On January 14, she laid twelve more. All of these eggs proved to be infertile. The average length of the egg was 33.98 mm. and the average diameter was 23.7 mm. The length varied from 33 to 35 mm. and the diameter from 22.5 to 24.5 mm. These measurements fall within the limits of variation, based on Georgia eggs, given by Wright and Funkhouser.*

I have noticed that captive females of *Terrapene carolina carolina* and *Clemmys insculpta* delayed egg-laying and then deposited a small complement of eggs in a sporadic fashion. In this particular case, however, the turtles were shipped within two days of capture and the abnormal date of laying may have been due to the factor of temperature. The freezing cold to which these turtles were exposed in transit resulted in the death of the female and one male within a week. On dissection two large, hard masses of undigested food were found wedged in the large intestine of the female. Apparently this intestinal obstruction caused death. The ovaries of the female contained no other eggs of large size when examined. Mr. Krautwurm stated that he believed that this species lays in May and September in Florida.

Can any reader suggest an explanation for this case of unseasonal egg-laying?

M. Graham Netting

Carnegie Museum

*Wright, Albert H. and Funkhouser, W. D., 1915. A Biological Reconnaissance of the Okefinokee Swamp in Georgia. Proc. Acad. Nat. Sci. Phila., LXVII, p. 117.

REPTILES AND AMPHIBIANS FROM NORTHEASTERN OKLAHOMA*

As was explained in a preceding paper (in this issue) the University of Oklahoma Museum of Zoology expedition worked in eastern Oklahoma during the summer of 1927. A list of reptiles and amphibians collected in the northeastern part of the State follows.

1. *Necturus maculosus* (Rafinesque)
   Adair County, 4 miles northwest of Watts.
2. *Triturus viridescens viridescens* (Rafinesque)
   Adair County, 4 miles north of Stilwell.
3. *Eurycea lucifuga* Rafinesque
   Delaware County, 4 miles southwest of Grove.
4. *Eurycea melanopleura* (Cope)
   Delaware County, 4 miles southwest of Grove.
5. *Eurycea multiplicata* (Cope)
   Delaware County, 6 miles northeast of Grove.
6. *Bufo americanus* Holbrook
   Delaware County, 6 miles northeast of Grove.
7. *Bufo fowleri* Garman
   Adair County, 4 miles northwest of Watts.
8. *Acris gryllus* (Le Conte)
   Adair County, 5 miles south of Bunch, 4 miles northwest of Watts.
9. *Hyla versicolor versicolor* (Le Conte)
   Adair County, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove; 5 miles west of Skiatook.
10. *Rana catesbeiana* Shaw
    Adair County, 5 miles south of Bunch, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove; Osage County, 7 miles west of Skiatook; Rogers County, 1 mile northeast of Chelsea; Sequoyah County, 4 miles north of Hanson.

*Contribution from the Zoological Laboratory of the University of Oklahoma, Second Series, No. 90.

11. *Rana clamitans* Latreille
Adair County, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove.

12. *Rana sphenocephala* (Cope)
Adair County, 5 miles south of Bunch, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove; Osage County, 5 miles west of Skiatook; Rogers County, 1 mile northeast of Chelsea; Sequoyah County, 2 miles south of Hanson.

13. *Gastrophryne carolinensis* (Holbrook)
Delaware County, 6 miles northeast of Grove.

14. *Crotaphytus collaris collaris* (Say)
Adair County, 5 miles north of Marble City, 6 miles north of Marble City; Sequoyah County, 1 mile north of Marble City, 8 miles north of Sallisaw.

15. *Sceloporus undulatus undulatus* (Latreille)
Adair County, 4 miles northwest of Watts, 5 miles south of Bunch; Delaware County, 6 miles northeast of Grove.

16. *Phrynosoma cornutum* (Harlan)
Creek County, Drumright.

17. *Cnemidophorus sexlineatus* (Linnaeus)
Adair County, 4 miles northwest of Watts; Osage County, 7 miles west of Skiatook; Sequoyah County, 1 mile west of Muldrow.

18. *Leiolopisma laterale* (Say)
Delaware County, 6 miles northeast of Grove.

19. *Eumeces fasciatus* (Linnaeus)
Adair County, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove; Rogers County, 5 miles west of Claremore.

20. *Diadophis punctatus arnyi* (Kennicott)
Delaware County, 6 miles northeast of Grove.

21. *Opheodrys aestivus* (Linnaeus)
Delaware County, 6 miles northeast of Grove.

22. *Masticophis flagellum flagellum* (Shaw)
Adair County, 5 miles south of Bunch; Delaware County, 6 miles northeast of Grove.

23. *Coluber constrictor flaviventris* (Say)
Adair County, 4 miles northwest of Watts; Rogers County, 7 miles west of Claremore.

24. *Natrix rhombifera* (Hallowell)
Adair County, 4 miles northwest of Watts; Rogers County, 5 miles west of Claremore.

25. *Natrix sipedon sipedon* (Linnaeus)
Adair County, 5 miles south of Bunch, 4 mile northwest of Watts; Rogers County, 5 miles west of Claremore; Sequoyah County, 1 mile west of Muldrow.

26. *Storeria dekayi* (Holbrook)
Adair County, 4 miles northwest of Watts.

27. *Thamnophis sirtalis sirtalis* (Linnaeus)
Adair County, 4 miles northwest of Watts; Delaware County, 6 miles northeast of Grove.

28. *Agkistrodon mokasen* Beauvois
Delaware County, 6 miles northeast of Grove.

29. *Agkistrodon piscivorus* (Lacépède)
Adair County, 4 miles northwest of Watts, 5 miles south of Bunch; Craig County, 3 miles east of Cinita.

30 *Terrapene carolina triunguis* (Agassiz)
Delaware County, 6 miles northeast of Grove; Ottawa County, 11 miles northeast of Grove.

31. *Graptemys geographica* (Le Sueur)
Delaware County, 6 miles northeast of Grove.

32. *Graptemys pseudogeographica pseudogeographica* (Gray)
Adair County, 4 miles northwest of Watts.

33. *Amyda ferox* (Schneider)
Rogers County, 5 miles west of Claremore.

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